

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Patent Application No. 09/904,566

REMARKS

Reconsideration and allowance of the subject application are respectfully requested.

Upon entry of this Amendment, claims 1-14 are pending in the application. In response to the February 16, 2005 Office Action, Applicant respectfully submits that the pending claims define patentable subject matter. By this Amendment, claims 1, 8 and 14 have been amended to improve clarity.

Claims 10-11 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. By this Amendment, Applicant has amended claim 10 to be dependent on claim 9. Accordingly, the Examiner is requested to remove the § 112, second paragraph, rejection.

Claims 1, 2, 7-9 and 14 are rejected under 35 U.S.C. § 102(a) as being anticipated by Ying (USP 6,061,600). Claim 3 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ying in view of Erekson et al. (USP 6,836,862; hereafter “Erekson”). Claim 6 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Ying in view of “Official Notice.” Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being over Ying in view of Erekson and “Official Notice”. Claims 10-13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ying in view of Akyol et al. (USP 6,701,448; hereafter “Akyol”) and “Official Notice”. Applicant respectfully traverses the prior art rejections.

Ying discloses a backup control mechanism in a distributed control network. A master node and a plurality of slave nodes are connected to a common bus. Each of the slave nodes are

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provided with means for detecting a failure of the master node and for taking over for the master node in such circumstances. In particular, each of the slave nodes has a timer programmed with a separate failure mode detection time period. When a slave node fails to receive control messages from the master node for a period exceeding its programmed failure mode detection time period, the slave node takes over for the master node. Because each slave node is programmed to detect a failure mode condition after a different amount of time than the other slave nodes are programmed with, when the first slave node programmed with the shortest failure mode detection time detects a failure mode condition, it takes over for the master node and becomes the substitute master node. Should the substitute master node also fail, then the slave node programmed with the next shortest failure mode detection time will detect a failure mode condition and take over for the substitute master node, becoming the second substitute master node.

Claims 1-7

Independent claim 1 is directed to “[a] method for building up backup master information.” Claim 1 recites:

- (a) receiving connection information from at least one of a plurality of slaves in a network;
- (b) determining a priority of said at least one of the plurality of slaves to be used as a backup master, when a network master disappears, according to the received connection information; and
- (c) announcing the determined priority to at least another one of the plurality of slaves.

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Applicant respectfully submits that claim 1 would not have been anticipated by or rendered obvious in view of Ying.

With regard to step (b), the Examiner cites various portions of Ying including col. 2, lines 44-54; col. 7, lines 35-49; col. 10, lines 50-67; and col. 11, lines 1-30 and 51-58 in support of the rejection. However, nowhere do the cited portions of Ying teach or suggest determining a priority of at least one of the plurality of slaves to be used as a backup master, when a network master disappears, according to the connection information received from the at least one of the plurality of slaves. Instead, Ying simply discloses that each of the slave nodes is pre-programmed to detect a failure mode condition after a different amount of time than the other slave nodes are programmed with such that the first slave node slave node which is pre-programmed with the shortest failure mode detection time becomes the substitute master node upon detection a failure mode condition. That is, the programmed amount time that a slave node waits to receive control messages from the master node before taking over for the master node is not determined based on connection information received from a slave node.

With regard to step (c), the Examiner cites col. 2, lines 44-58 and col. 11, lines 24-35 of Ying in support of the rejection. However, nowhere do the cited portions of Ying disclose announcing the determined priority to at least another one of the plurality of slaves. Instead, the slaves are simply programmed to detect a failure mode condition after different amounts of time. That is, programming a time interval does not inform a slave of a determined priority of another slave.

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Accordingly, claim 1 should be allowable since the cited reference does not teach or suggest all of the features of the claimed invention.

With regard to dependent claim 3, the Examiner concedes that Ying does not disclose “the received connection information includes received signal strength indication (RSSI) and/or link quality information”. In view of this deficiency, the Examiner cites Erekson for disclosing the use of RSSI in communication devices and asserts that “[i]t would have been obvious ... to combine the teachings of Ying and Erekson because Erekson’s teaching of using received signal strength indication enables Ying’s method to support devices used for voice applications to measure the strength of the incoming signal.” However, we believe that it is quite clear that Erekson provides absolutely no teaching or suggestion which would motivate one of ordinary skill in the art to modify Ying to determine a priority of at least one of the plurality of slaves to be used as a backup master, when a network master disappears, according to signal strength indication (RSSI) and/or link quality information received from the at least one of the plurality of slaves.

“To support the conclusion that the claimed invention is directed to obvious subject matter, either references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the reference.” *Ex parte Clapp* 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). However, in the present case, the Examiner has failed to provide any objective reasoning why one of ordinary skill in the art would have been motivated to modify Ying based on Erekson to produce the claimed invention. The

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mere fact that Erikson discusses the use of RSSI in wireless devices (which is well known in the art) is not a suggestion to determine a priority of at least one of the plurality of slaves to be used as a backup master, when a network master disappears, according to RSSI received from the at least one of the plurality of slaves. Further, RSSI is not even a parameter which would be used in a distributed control network such as Ying where nodes are connected via a wired bus.

Accordingly, for at least the above reasons, Applicant respectfully submits that claims 1-7 should be allowable over Ying.

Claims 8-13

Independent claim 8 is directed to “[a] method for designating a new master of a network when a preexisting network master disappears.” Claim 8 recites:

- (a) determining at a slave whether the preexisting network master has disappeared;
- (b) if the preexisting network master has disappeared, checking a rank assigned to the slave based on connection information received from the slave, wherein the rank is used for choosing a new network master and is received before the disappearance of the preexisting network master; and
- (c) changing the slave to the new network master if it determined that the rank is highest of any one assigned to a plurality of slaves.

Applicant respectfully submits that claim 8 would not have been anticipated by or rendered obvious in view of Ying. In particular, Applicant submits that it is quite clear that Ying does not teach or suggest claimed steps (b) or (c).

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With regard to step (b), the Examiner cites various portions of Ying including col. 2, lines 44-54; col. 7, lines 35-49; col. 10, lines 50-67; and col. 11, lines 1-30 and 51-58 in support of the rejection. However, nowhere do the cited portions of Ying teach or suggest checking a rank assigned to the slave based on connection information received from the slave, wherein the rank is used for choosing a new network master and is received before the disappearance of the preexisting network master. Instead, as discussed above, Ying simply discloses that each of the slave nodes is pre-programmed to detect a failure mode condition after a different amount of time than the other slave nodes are programmed with such that the first slave node slave node which is pre-programmed with the shortest failure mode detection time becomes the substitute master node upon detection a failure mode condition. That is, the programmed amount time that a slave node waits to receive control messages from the master node before taking over for the master node is not a rank which is assigned to the slave node based on connection information received from the slave and is not checked if the preexisting network master has disappeared.

With regard to step (c), the Examiner cites col. 2, lines 44-58; col. 7, lines 35-49; and col. 11, lines 24-35 of Ying in support of the rejection. However, nowhere do the cited portions of Ying teach or suggest changing the slave to the new network master if is determined that the rank is highest of any one assigned to a plurality of slaves. Instead, the slaves are simply programmed to detect a failure mode condition after different amounts of time.

Accordingly, for at least the above reasons, Applicant respectfully submits that claims 8-13 should be allowable over Ying.

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Claim 14

Independent claim 14 is directed to “[a] method for establishing a connection between a new master and a remaining plurality of slaves of a network when a preexisting network master disappears.” Claim 14 recites:

- (a) checking whether the preexisting network master has disappeared;
- (b) checking backup master rank information, when it is determined that the preexisting network master has disappeared in the step (a);
- (c) attempting to establish a connection with the new network master when it is determined that one of the remaining plurality of slaves does not have a highest priority, according to the backup master rank information; and
- (d) remaining as one of the remaining plurality of slaves if a connection with the new network master is established in the step (c).

Applicant respectfully submits that claim 14 would not have been anticipated by or rendered obvious in view of Ying. In particular, Applicant submits that it is quite clear that Ying does not teach or suggest claimed steps (b) or (c).

With regard to step (b), the Examiner cites various portions of Ying including col. 2, lines 44-54; col. 7, lines 35-49; col. 10, lines 50-67; and col. 11, lines 1-30 and 51-58 in support of the rejection. However, nowhere do the cited portions of Ying teach or suggest checking backup master rank information, when it is determined that the preexisting network master has disappeared. Instead, Ying discloses that when a slave node fails to receive control messages from the master node for a period exceeding its programmed failure mode detection time period, the slave node takes over for the master node.

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With regard to step (c), the Examiner cites col. 2, lines 37-39; col. 7, lines 39-49; col. 9, lines 6-22 and 43-48; col. 10, lines 15-23, 36-43 and 54-62; and col. 11, lines 1-9 and 24-58 of Ying in support of the rejection. However, nowhere do the cited portions even remotely teach or suggest attempting to establish a connection with the new network master when it is determined that one of the remaining plurality of slaves does not have a highest priority, according to the backup master rank information.

Accordingly, for at least the above reasons, Applicant respectfully submits that claims 14 should be allowable over Ying.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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